Remarks:

Claims 36-40 and 42-43 remain pending in the Subject Application. Claims 1-22 and 41 are canceled. Claims 23-35 and 44-54 are withdrawn. Claims 36-40 and 42-43 stand rejected. Claim 36 is currently amended. No new matter has been introduced by way of amendment.

A. Rejections – 35 U.S.C. § 112

Claims 36-40, 42 and 43 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner contends that the language "the interconnect consisting essentially of a ferritic stainless steel consisting essentially of" in claim 36 lacks support, and the phrase "less than about" in claim 36 is indefinite. Applicant respectfully disagrees that these rejections are proper. Nonetheless, claim 36 is amended herein to replace "consisting essentially of" with "comprising", and to delete the several passages including "less than about". Therefore, these rejections are now moot.

The Examiner also rejects claims 39, 40 and 43 under § 112, first paragraph, as being indefinite because they "recite open language ('comprises'; 'includes') regarding the steel alloy of claim 36." This basis for rejection has been addressed by the amendments herein to claim 36.

B. Rejections – 35 U.S.C. § 103(a)

Claims 36-40, 42 and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,613,468 to Simpkins et al. ("Simpkins"), in view of Japanese Patent Application JP 2000-294256 to Taruya et al. ("Taruya") as evidenced by U.S. Patent No. 5,424,144 to Woods ("Woods"). Applicant traverses this rejection for the reasons set forth herein.

In formulating a rejection under § 103(a), the Office has the initial burden of identifying in an Office Action a rational basis why a person of ordinary skill in the art would have combined or modified the prior art elements in the manner claimed. *See* attached copy of May 3, 2007 Memo by Margaret A. Focarino, Deputy Commissioner

for Patent Operations; *see also KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007) (a patent examiner must provide "an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate this review, this analysis should be made explicit."); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR*) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."); *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985) ("To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.").

In addition, establishing a *prima facie* case of obviousness requires that the cited references, when combined as the Examiner indicates, teach or suggest every element of the rejected claim. *See, e.g.*, MPEP § 2142.

In the case at hand, as discussed further below, the Examiner has not established a *prima facie* case that the claimed inventions would have been obvious for at least the reasons that: (1) the Examiner has not expressly set forth in the Office Action a rational basis as to why one of ordinary skill in the art, after considering Simpkins, Taruya, and Woods, would have applied the alloy of claim 36 in the manner recited in that claim; and (2) Simpkins, Taruya, and Woods, either individually or combined, do not teach or suggest every element recited in claim 36, as amended herein.

Beginning our discussion with Taruya, the Examiner continues to misunderstand Applicant's arguments. Applicant requests that Examiner re-consider those arguments and, in order to preserve the arguments for appeal, sets them out again below.

Claim 36 of the Subject Application recites the following element and limitation:

> ... at least one of niobium, titanium, or tantalum, wherein the weight percentages of niobium, titanium, and tantalum satisfy the equation $0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1$.

Taruya discloses "Nb less than 0.3%" (paragraph 25) and "Ti is less than 0.2%" (paragraph 49). Taruya does not disclose tantalum (Ta). Adding together the maximum possible levels of Nb (less than 0.3%) and Ti (less than 0.2%), along with ½ the maximum possible level of Ta (0%) described in Taruya yields <u>less than 0.5%</u>, which falls <u>outside</u> the above limitation from claim 36. In other words, <u>Taruya does not disclose a an alloy including concentrations of Nb, Ti, and Ta that satisfy the above limitation from claim 36</u>. Moreover, Taruya teaches that Ti and Nb <u>must</u> be less than 0.2% and 0.3%, respectively. (See paragraphs 0047 and 0049 of Taruya) In other words, <u>Taruya clearly teaches away from an alloy including concentrations of Ti, Nb, and Ta that is less than 0.5%</u>. Therefore, Taruya cannot be interpreted even to suggest an alloy satisfying the above equation from claim 36.

No combination of Taruya, Simkins, and Woods discloses or suggests an alloy including concentrations of Nb, Ti, and Ta satisfying the above within the range of claim 36. Accordingly, Applicant submits that Taruya, taken alone or in combination with Simpkins and Woods, fails to teach or suggest all the elements recited in claim 36 of the Subject Application. Thus, the Examiner has not established a *prima facie* case that claim 36 would have been obvious over the cited references.

Apparently, the Examiner has misunderstood Applicant's argument to be that the above quoted passage of claim 36 requires Ta. Applicant is not making and has not made that argument. Instead, Applicant has repeatedly argued that because Taruya does not disclose an alloy including Ta, and teaches that Ti and Nb must be less than 0.2% and 0.3%, respectively, Taruya could not possible teach an alloy including Nb, Ti, and Ta concentrations within the above-quoted limitations of claim 36. More simply, Applicant has argued that because Taruya teaches an alloy in which the combined concentrations of Nb, Ti, and Ta are less than 0.5%, the reference could not possibly

teach an alloy having a composition that satisfies the above-quoted limitation from claim 36.

The Subject Application relates generally to solid oxide fuel cells (SOFCs) including yttria-stabilized zirconia (YSZ) as the electrolyte. In order to function properly, the other components of such SOFCs must have thermal expansion properties substantially the same as those of YSZ at the high operating temperature of a SOFC (relative to other fuel cell types). The invention of claim 36 discloses specific minimum values for creep rupture strength and creep strain. These values are achieved through careful selection of the composition of the steel of claim 36. The references cited by the examiner do not teach or suggest each and every element of claim 36. As discussed in the Subject Application, certain conventional ferritic stainless steels are not suited for use as interconnects in SOFCs because of their unsuitable thermal expansion and electrical conductivity properties at the high operating temperatures of SOFCs. Before the invention of claim 36, it was known to those of ordinary skill that ferritic stainless steels could be used in other, lower-temperature fuel cells, but not in SOFCs. Generally, because of the widely varying operating temperatures and other operating conditions of different fuel cell types, their components are not interchangeable. This is supported in Taruya, which describes various categories of fuel cells:

> [0003]: At present, with regards to fuel cells achieving the commercial level, there are phosphoric acid-type fuel cells and fused carbonate-type fuel cells. The rough operating temperatures for fuel cells are 1000°C for solid electrolyte-type fuel cells [SOFCs], 650°C for fused carbonate-type fuel cells, 200°C for phosphoric acid-type fuel cells, and 80°C for solid polymer type fuel.

In this passage "solid electrolyte-type fuel cells" refers to SOFCs, and "solid polymer type fuel cells" refers to the fuel cells to which Taruya is directed.

Applicant has made the point in previous Office Action responses that Taruya confirms that the components of SOFCs (including interconnects) are not

interchangeable with the same components from other types of fuel cells because of the wide differences in fuel cell operating conditions. However, due to the imprecise translation of the full-text version of Taruya, discerning the meaning of the relevant passages of Taruya was difficult. Therefore, the undersigned commissioned the same translation service to carefully retranslate paragraphs 0005 and 0006 of Taruya into English. Attached to this response is the retranslation of those paragraphs and the related certificate of translation. As retranslated, paragraphs 0005 and 0006 of Taruya read as follows:

> [0005]: Although the aforementioned various types of fuel cells are referred to by the common name of "fuel cell", <u>when taking into account the constituent materials of each cell, they need to be regarded as completely different things.</u> This is because the presence of corrosion of constituent materials <u>due to the electrolyte used</u>, the presence of high temperature oxidation which begins to actualize from around 380°C, the sublimation and redeposition of electrolyte, and the performance demanded by the presence of coagulation, etc., particularly anti-corrosion resistance, is completely different for each fuel cell. In actuality, the materials used are various, ranging from graphite materials, to Ni-clad material, high alloys, and stainless steel.
>
> [0006]: <u>It is completely unthinkable to utilize the materials used in commercialized phosphoric acid fuel cells and molten carbonate fuel cells as the constituent material for polymer electrolyte fuel cells.</u> (Emphases added)

The Examiner had previously contended that the above passages were relevant only to the electrolyte of the fuel cells (see page 6 of the Office Action). It is clear from the above carefully prepared retranslation, however, that the above passage pertains to <u>all other constituent materials of a fuel cell (including the interconnect) because of (due to) the electrolyte</u>. This is because the choice of electrolyte drives the conditions,

temperature and corrosion especially, in the fuel cell, which affects these other constituents. Taruya goes on to say that because of this, it is completely unthinkable to use materials (including interconnects) from other kinds of fuel cells in polymer electrolyte fuel cells.

Taruya goes to great lengths to distinguish the different categories of fuel cells and their operating conditions, and goes on to teach that each fuel cell must be treated independently when considering constituent materials. One skilled in the art, after considering the above teaching of Taruya, would not have been motivated to use, and indeed would have been taught not to use, any of the constituent materials of the fuel cell described in Taruya in another type of fuel cell, especially one operating at a much higher temperature. Therefore, the Examiner has not established a *prima facie* case of obviousness since the Examiner has not identified a rational basis why one would have combined the teachings of the prior art in the manner asserted by the Examiner. Moreover, Taruya, taken alone or in combination with Simpkins and Woods, fails to teach or suggest all the elements recited in claim 36 of the Subject Application. Thus, the rejection of claim 36 should be withdrawn.

The Examiner cites Simpkins as teaching ferritic stainless steel as a SOFC interconnect material. Even assuming this is correct, the reference to ferritic stainless steel is generic, and Simpkins does not teach or suggest each and every element of claim 36. Therefore, any ferritic stainless steel taught by Simpkins would not have the thermal expansion properties of claim 36 necessary to make the ferritic stainless steel operable in a SOFC. Accordingly, Applicant submits that Simpkins, taken alone or in combination with Taruya and Woods, fails to teach or suggest all the elements recited in claim 36 of the Subject Application.

The Examiner continues to misinterpret the teachings of Simpkins, apparently based on an incorrect interpretation of sentence construction. Column 6, lines 46-67 of Simpkins begins to describe the interconnects of Simpkins as follows:

> … The interconnects are preferably stable and electrically conductive <u>at about 800°C</u> in a dual environment, *i.e.*, an oxidizing atmosphere on one side and a reducing atmosphere on the other side. Some possible interconnects can comprise materials such as <u>silver</u>, copper, ferrous materials, strontium, <u>aluminum</u>, lanthanum, chromium, chrome, gold, platinum, palladium, nickel, titanium, conducting ceramics (*e.g.* doped rare earth oxides of chromium, manganese, cobalt, nickel, and the like; doped zirconia, including, zirconia doped with titanium, copper, and the like), and the like, as well as alloys, oxides, cermets, composites, and combinations comprising at least one of the foregoing materials. (Emphases added)

Through a simple examination of the list of materials in this passage it is clear that this list is a list of <u>possible base materials</u>. The listed materials include, for example, aluminum and silver. In this very same paragraph, Simpkins states that "[t]he interconnects are preferably stable … at about 800°C." Elsewhere in the description, Simpkins states that "[a] SOFC operates at high temperatures (generally from about 800°C to about 1200°C)…" (column 2, lines 48-49). However, those of ordinary skill understand that <u>aluminum melts at 660°C</u>, and <u>silver melts at 960°C</u>. One of ordinary skill would understand that aluminum and silver, for example, could not even remain solid at SOFC operating temperatures. Thus, the list clearly is a list of base materials that must be modified in some way to be useful as interconnect material in SOFCs. Simpkins goes on to say that:

> Preferably, the interconnects comprise lanthanum chromite doped with alkaline earth element. More preferably, the interconnects comprise strontium-doped lanthanum chromite (LSC).

All of this adds context to the final sentence of this paragraph:

> Also, metals, such as ferritic stainless steels, nickel, chrome, aluminum alloys, may be coated with LSC or strontium-doped lanthanum manganite (LSM) to achieve the same desired properties. (Emphases added)

The Examiner has repeatedly insisted that "Simpkins states 'ferritic stainless steels...may be coated...to achieve the same desired properties' as uncoated stainless steels." The underlined portion of this statement, which is not contained in Simpkins, is incorrect and out of context. One of ordinary skill would understand that the passage quoted above means that the metals may be coated to achieve the same desired properties as lanthanum chromite doped with an alkaline earth element or LSC. The object of the last sentence in the paragraph is the previous sentence, which discusses lanthanum chromite doped with alkaline earth element or LSC. The previous sentences do not mention "desired properties" of uncoated stainless steels. While it is true that the word "may" can sometime express a possibility, the possibility of being coated is made a necessity by the following qualifier "to achieve." The word "achieve" means "to bring about or accomplish by effort." Even out of context of the preceding sentence, this final sentence only makes literal sense if one is achieving something (the same desired properties) through some effort, *i.e.*, by coating. It does not make sense to achieve something different (these desired properties of lanthanum chromite doped with alkaline earth element or LSC) by doing nothing. Doing nothing leaves only the base materials, some of which melt in their unaltered state at SOFC operating temperatures. Aluminum is mentioned for the second time in this final sentence. Clearly, the aluminum must be modified (*e.g.,* coat it) to prevent it from melting at SOFC operating temperatures. Therefore, the metals may be coated (*i.e.*, there is a possibility of being coated), but the metals must be coated in order to achieve (through the coating) the desired properties. Therefore, Simpkins actually teaches away from the invention recited in claim 36 because the reference teaches that a metal, including a ferritic stainless steel, must be coated in order to achieve the desired properties of Simpkins for a SOFC interconnect.

The foregoing discussion is necessary based on the Examiner's misinterpretation of the word "may" in the above passage from Simpkins. Putting it simply, Simpkins actually teaches that generic ferritic stainless steels and other metals are ill-suited for use as interconnects in SOFCs. Thus, one skilled in the art, after considering Simpkins, would have <u>no reason</u> to use uncoated ferritic stainless steel in SOFCs. Therefore, Simpkins, taken alone or in combination with Taruya and Woods, fails to teach or suggest all the elements recited in claim 36 of the Subject Application.

The Examiner alleges that the use of ferritic stainless steel interconnects are further evidenced by Woods. Woods mentions SOFCs in the first paragraph only, and thereafter focuses on molten carbonate fuel cells. Molten carbonate fuel cells operate anywhere from <u>200°C to 700°C cooler than SOFCs</u>, and as Taruya teaches us, "when taking into account the constituent materials of each cell, they need to be regarded as completely different things."

Further, Woods discusses only "ferrous metals." Used in this context "ferrous" is merely a generic word for iron. Not all ferrous alloys are stainless steels. Although the term "stainless steel" appears once in column 1 of Woods, there are several types of stainless steels, including austenitic, ferritic, and martensitic. Not all stainless steels are ferritic stainless steels, and the differences between the various types are significant. Please see Applicant's May 17, 2006 Office Action response for a detailed explanation of differences between ferritic and other types of stainless steels.

As noted, the term "stainless steel" is used once in column 1 of Woods instead of "ferrous metal." In this instance (column 1, lines 28-34), Woods actually teaches away from the use of stainless steel:

> A major factor contributing to premature fuel cell failure is corrosion and fatigue in the wet seal area. This failure is hastened by thin-film electrochemical <u>corrosion at stainless steel surfaces</u> of the separator plate causing weakening of the wet seal structure through intracrystalline and trans-crystalline cracking. (Emphasis added)

Woods' focus is directed to carbon steel, given the multiple references in column 1 to corrosion problems experienced by ferrous metals. However, Woods does not clearly define the chemical composition of the steel contemplated in the invention for an obvious reason – Woods is only concerned with the mechanical design of a separator plate and not its chemical composition. Even at the lower operating temperature of Woods, thermal expansion in steel separators is a problem. Woods attempts to overcome this problem with a mechanical design. The invention of claim 36 addresses this problem by providing an advantageous alloy composition. Despite the fact that both the Subject Application and Woods deal with fuel cell interconnects, they are not analogous. Considering the inventions as a whole, Woods addresses mechanical advances, and the Subject Application addresses advances in alloy composition.

For the reasons discussed herein, Applicant asserts that the Examiner has not established a *prima facie* case of obviousness for at least the reasons that Woods does not teach or suggest the use of ferritic stainless steel interconnects in SOFCs and, more particularly, does not teach or suggest the specific alloy composition recited in claim 36. Woods, taken alone or in combination with Taruya and Simpkins, fails to teach or suggest all the elements recited in claim 36 of the Subject Application.

In summary, Taruya, Simpkins, and Woods, taken alone or in combination, fail to teach or suggest all of the elements recited in claim 36 of the Subject Application. In addition, Taruya teaches that "when taking into account the constituent materials of each cell, they need to be regarded as completely different things." Simpkins teaches that ferritic stainless steels must be coated in order to achieve the desired properties enabling them to operate in SOFCs. Woods teaches a mechanical, not chemical, solution to thermal expansion in molten carbonate fuel cells, not SOFCs. Thus, it is respectfully submitted that the Examiner has failed to provide a sufficient rationale why one of ordinary skill in the art would have modified any of the prior art of record to arrive at the invention recited in claim 36. The Examiner has not set forth a reasonable basis why one of ordinary skill would have combined the references in the fashion claimed. Thus, the Examiner has not established a *prima facie* case of obviousness.

Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 36-40 and 42-43.

Conclusion:

Applicant respectfully asserts that the claims of the Subject Application, as amended herein, recite subject matter that is patentable over the cited references. Applicant respectfully requests issuance of a Notice of Allowance at an early date. If, however, the Examiner is of the opinion that the Subject Application is in condition for disposition other than allowance, Applicant respectfully requests that the Examiner contact Applicant's attorney at the telephone number listed below so that those concerns may be addressed.

Respectfully submitted,

8/9/07
Date

Matthew P. Frederick
Reg. No. 60,469

Customer No. 25,074

KIRKPATRICK & LOCKHART PRESTON GATES ELLIS LLP
Henry W. Oliver Building
535 Smithfield Street
Pittsburgh, Pennsylvania 15222-2312
Phone: 412.355.6792
Facsimile: 412.355.6501

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

MEMORANDUM

DATE: **May 3, 2007**

TO: **Technology Center Directors**

Margaret A. Focarino

FROM: **Margaret A. Focarino**
Deputy Commissioner
for Patent Operations

SUBJECT: **Supreme Court decision on *KSR Int'l. Co., v. Teleflex, Inc.***

The Supreme Court has issued its opinion in *KSR*, regarding the issue of obviousness under 35 U.S.C. § 103(a) when the claim recites a combination of elements of the prior art. *KSR Int'l Co. v. Teleflex, Inc.*, No 04-1350 (U.S. Apr. 30, 2007). A copy of the decision is available at http://www.supremecourtus.gov/opinions/06pdf/04-1350.pdf. The Office is studying the opinion and will issue guidance to the patent examining corps in view of the *KSR* decision in the near future. Until the guidance is issued, the following points should be noted:

(1) The Court reaffirmed the *Graham* factors in the determination of obviousness under 35 U.S.C. § 103(a). The four factual inquiries under *Graham* are:

(a) determining the scope and contents of the prior art;
(b) ascertaining the differences between the prior art and the claims in issue;
(c) resolving the level of ordinary skill in the pertinent art; and
(d) evaluating evidence of secondary consideration.

Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

(2) The Court did not totally reject the use of "teaching, suggestion, or motivation" as a factor in the obviousness analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

(3) The Court rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

(4) The Court noted that the analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. The Court specifically stated:

> Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**.

KSR, slip op. at 14 (emphasis added).

Therefore, in formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed.

Review/Edit of Laid-Open Japanese Patent Publication 2000-294256 (特開 2000-293256)

Translator's Forward: In the interests of clarity and my own quality control, I have included the original Japanese text (per the Patent & Utility Model Gazette Database of the Japan Patent Office Website※, which has been verified as matching pdf copies of document provided), the old translation previous provided by myself, and a new translation (which I initially completed without referencing the old translation.

Original Japanese:
【０００５】上記の各種の燃料電池は、『燃料電池』と言う共通の呼称で呼ばれているものの、それぞれの電池構成材料を考える場合には、全く別物として捉えることが必要である。使用される電解質による構成材料の腐食の有無、３８０℃付近から顕在化し始める高温酸化の有無、電解質の昇華と再析出、凝結の有無等により求められる性能、特に耐食性能が、それぞれの燃料電池で全く異なるためである。実際、使用されている材料も様々であり、黒鉛系素材から、Ｎｉクラッド材、高合金、ステンレス鋼と多様である。

Old Translation:
[0005] With each of the aforementioned types of fuel cells, in cases when we think about the individual constituent materials of items that are referred to by the common name of "fuel cell," it is necessary for them to be batched as completely different things. This is because the performance obtained by the absence of constituent materials corroding due to the electrolytes used, the absence of high-temperature oxidation that starts to actualize from around 380°C, and the absence of sublimation, reprecipitation, and coagulation of electrolytes, especially corrosion-resistance performance, is completely different for each fuel cell. Actually, the materials used are many, varying from graphite material to Ni clad material, high alloy and stainless steel.

New Translation:
[0005]: Although the aforementioned various types of fuel cells are referred to by the common name of "fuel cell", when taking into account the constituent materials of each cell, they need to be regarded as completely different things. This is because the presence of corrosion of constituent materials due to the electrolyte used, the presence of high temperature oxidation which begins to actualize from around 380°C, the sublimation and redeposition of electrolyte, and the performance demanded by the presence of coagulation, etc., particularly anti-corrosion resistance, is completely different for each fuel cell. In actuality, the materials used are various, ranging from graphite materials, to Ni-clad material, high alloys, and stainless steel.

Notes:
1. First line of clause includes the idiomatic usage of a word that literally means "to catch". Originally translated as "batched"; I have now chosen "regarded".
2. Replaced use of the word "absence" with the more accurate "presence". Original text uses a word that literally means "absence and/or presence", however, "presence" or "existence" is the better term. Original translation due to my level of experience at time of project.
3. More accurate translation of the latter half of the second sentence due to current better understanding of and experience with the terminology involved ("sublimation", "redeposition", "performance", etc.).

※ http://www.ipdl.inpit.go.jp/Tokujitu/tjsogodb.ipdl?N0000=101
※

Original Japanese:
【０００６】商用化されているリン酸型燃料電池、溶融炭酸塩型燃料電池に使用されている材料を、固体高分子質型燃料電池の構成材料に適用することは全く考えることができない。

Old Translation:
[0006] It is not at all possible to consider the application of material used in commercialized phosphoric acid-type fuel cells and fused carbonate-type fuel cells in the constituent material of solid polymer-type fuel cells.

New Translation:
[0006]: It is completely unthinkable to utilize the materials used in commercialized phosphoric acid fuel cells and molten carbonate fuel cells as the constituent material for polymer electrolyte fuel cells.

Notes:
1. I have chosen a smoother phrasing of the clause; a result of current level of translation experience.
2. The inclusion of "-type" in the names of fuel cells appears in some references but not all. I have not used it in the new translation.
3. Two of the types of fuel cells referenced - "molten carbonate fuel cells" and "polymer electrolyte fuel cells" - were originally translated as "fused carbonate-type fuel cells" and "solid polymer-type fuel cells". The terms used in the old translation were literal translations of the Japanese terminology. The difference in translation between old and new is due to my current level of translation experience, as well as current knowledge of and access to information resources on the technology in question.

Expert Translation Bureau, Inc.

EXPERT TRANSLATION BUREAU, INC.

Telephone: (312) 759-9999 Facsimile: (312) 780-5099
920 W. Lakeside, Suite 2109, Chicago, IL 60640
www.Expert-Translation.com

CERTIFICATE OF TRANSLATION

May 25, 2007

I, Dwight Sora, hereby certify that I am competent in both English and Japanese languages.

I further certify that under penalty of perjury revised translation of articles* [0005] *and* [0006] *of the aforementioned patent document:

[Patent 2000-294256]

from the Japanese language into the English language is accurate and correct to the best of my knowledge and proficiency.

Professional Translator

OFFICIAL SEAL
ALEXANDER GOFMAN
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 8-8-2009

05. 25. 2007

OIPE
AUG 0 9 2007
PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: John F. Grubb	:	
	:	
Group Art Unit: 1745	:	FERRITIC STAINLESS STEEL
	:	HAVING HIGH CREEP
Serial No.: 10/602,945	:	RESISTANCE
	:	
Filed: June 24, 2003	:	
	:	Confirmation No.: 1816
Examiner: Tracy Mae Dove	:	

Mail Stop: RCE
Commissioner for Patents
P.O. Box: 1450
Alexandria, VA 22313-1450

EXPRESS MAIL CERTIFICATE

"Express Mail" label number EB616636140US

Date of Deposit August 9, 2007

I hereby certify that the following attached paper or fee:

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL (IN DUPLICATE)
CHECK PAYABLE TO PTO (For RCE Fees)
AMENDMENT AND REMARKS ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION
PETITION AND FEE FOR EXT. OF TIME (IN DUPLICATE)
CHECK PAYABLE TO PTO (For 3 Months Ext. of Time Fees)

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: **Mail Stop: RCE, Commissioner for Patents, P.O. Box: 1450, Alexandria, VA 22313-1450**

Beth H. Retort
(Typed or printed name of person mailing paper or fee)

Beth H. Retort
(Signature of person mailing paper or fee)